Claims

1. A method for refilling service-brake circuits after rapid compressed air consumption or loss, wherein the service-brake circuits are compressed air load circuits of a consumer part of a compressed air system for vehicles, which system is provided with at least one further compressed air load circuit with compressed air reservoir, **characterized in that** communication is established between the at least one further compressed air load circuit with compressed air reservoir and the intact service-brake circuits in order to refill these service-brake circuits from the compressed air reservoir of the least one further compressed air load circuit.

2. A method according to claim 1, **characterized by** the following steps:
   - continuous determination of the actual values of a variable of state (pressure, air flow rate, air mass, energy) in the service-brake circuits and the at least one further compressed air load circuit,
   - comparison of the actual values with a lower threshold value,
   - shutoff of the service-brake circuits detected as defective when the results are below the threshold value, and
   - refilling of the intact service-brake circuits from the compressed air reservoir of the at least one further compressed air load circuit.

3. A method according to claim 2, **characterized in that** the threshold value corresponds to the variable of state to be adjusted in the respective compressed air load circuit.

4. A method according to claim 1, **characterized in that** the communication between the at least one further compressed air load circuit and the intact service-brake circuits is interrupted when the variables of state of the at least one further compressed air load circuit and the service-brake circuits become equal or the index value of the variable of state is reached in the refilled service-brake circuits.

5. A device for refilling service-brake circuits after rapid compressed air consumption or loss in a vehicle with a compressed air system, which is provided with a compressed air supply part with compressor and compressed air load circuits comprising the service-brake circuits, which are supplied with compressed air via electrically actuatable valves, wherein the service-brake circuits and at least one further compressed air load circuit are provided with compressed air reservoirs and the pressure in the compressed air load circuits is monitored by sensors, whose electrical signals are evaluated by an electronic control unit that controls the electrically actuatable valves, **characterized in that** the electrically actuatable valve (24) of the at least one further compressed air load circuit (38) provided with a compressed air reservoir is closed in the de-energized or pilot-controlled normal state, whereas the electrically actuatable valves (16, 18, 20, 22) of the service-brake circuits (26, 28) and of the further compressed air load circuits (30, 32, 34, 36) are open in the de-energized or pilot-controlled normal state, wherein the electronic control unit (84)

- compares the continuously measured values of a variable of state (pressure, air flow rate, air mass, energy) of the service-brake circuits with a threshold value,

- shuts off the service-brake circuits detected as defective or failed when the results are below the threshold value, and
- switches the electrically actuatable valve (24) of the at least one further compressed air load circuit with compressed air reservoir into the open position to establish communication between the at least one further compressed air load circuit with compressed air reservoir and the intact service-brake circuits in order to refill these service-brake circuits from the compressed air reservoir of the least one further compressed air load circuit.

6. A device according to claim 5, **characterized in that** the electronic control unit (84) switches the electrically actuatable valve of the defective service brake into the closed position in the event of rapid drop of the variable of state (pressure, air flow rate, air mass, energy), for example due to line rupture or line break.

7. A device according to claim 5, **characterized in that** the pressure level in the least one further compressed air load circuit (38) with compressed air reservoir is higher than the pressure level in the service-brake circuits (26, 28).

8. A device according to claim 5, **characterized in that** the electrically actuatable valves (16, 18) of the service-brake circuits (26, 28) and the electrically actuatable valves (20, 22, 24) of the further compressed air load circuits (30, 32, 34, 36) are connected to a common compressed air distributor line (14), which is in communication with a compressed air supply line (40) in communication with the compressor (7).

9. A device according to claim 5, **characterized in that** the control unit (84) closes the electrically actuatable valve (24) of the at least one further compressed air load circuit (38) with compressed air reservoir once again when the variables of state of the at least one further compressed air load circuit (38) and the service brake circuits (26, 28) refilled with compressed air become equal or when the variable of state has reached the index value in the service-brake circuits.

10. A device according to claim 5, **characterized in that** the threshold value corresponds to the value of the variable of state to be adjusted in the respective compressed air load circuit.

11. A device according to one of claims 5 to 10, **characterized in that** the electrically actuatable valves are solenoid valves.